THE KLUANE LAKE AREA

AND

ST. ELIAS MOUNTAINS

POLAR
PAM
6141

POLARPAM

Digitized by the Internet Archive
in 2022 with funding from
University of Alberta Library

https://archive.org/details/kluanelakeareast00unse

4 1972
BOREAL INSTITUTE
LIBRARY

THE KLUANE LAKE AREA

The Kluane Lake area is situated in Southwestern Yukon. This area forms the triangular southwest part of the Northern Rockies, not only embracing the Shakwak Valley, but also the famous Northern Icefield Ranges of the St. Elias Mountains, Canada's highest peaks.

Northeast of the Shakwak Valley trench are the Ruby and Nisling Ranges. The high mountains keep warm gulfstream air from reaching the valley, hence winter temperatures can dip as low as Yukon's official record of minus 80 degrees.

Kluane Lake, Yukon's largest, at 153 square miles, opens around mid-June and freezes over about the first of December. Ice can be as much as eight feet thick.

An historical wagon road runs from Whitehorse to Kusawa Lake and the Haines Junction area, on to Kluane (Silver City) and then to the Chisana River area of Alaska. The Alaska Highway follows this trail closely as far as the Yukon-Alaska border near Beaver Creek.

These areas attracted many prospectors before the turn of the century. Kluane, at the east end of the lake, was the centre of the mining district. It had a roadhouse, post office, including a Northwest Mounted Police post.

Burwash Landing, on the west side of the lake, was established in 1903 by two French Alsatian brothers, Eugene and Louis Jacquot. It was named for Major Lockwood Burwash, a government mining recorder. The Jacquot brothers first worked as placer miners and trappers, later becoming well known big game outfitters.

KLUANE NATIONAL PARK

On February 22nd, 1972 an 8,500 square mile area in Southwestern Yukon was established as Kluane National Park. It encompasses most of the 10,400 square mile area set aside as a park reserve in 1942 and declared a game sanctuary in 1943.

The Haines and Alaska Highways follow its borders for about 250 miles.

Most of the lakes and streams in the park contain Arctic Grayling, Lake Trout, and Northern Pike. There are a wide variety of birds including ptarmigan, the Golden Eagle and the Mountain Bluebird.

Among the wildlife are moose, caribou, Dahl Sheep, mountain goat, grizzly bear, black bear, wolf, wolverine, coyote, beaver, marten, mink, muskrat, red and cross fox, lynx, weasel, otter, porcupine, gopher and pika. Cougar and mule deer have been reported, but are very scarce.

MUSEUM & INFORMATION CENTRE

The Kluane Community Dvelopment and Historical Society operates a combined museum, visitor information centre and native craft shop at Burwash. Current efforts are aimed at constructing a new museum building. However, the society has been operating successfully from a log building at Mile 1093 of the Alaska Highway ten miles north of Destruction Bay. Displays include early prospecting, mining and native artifacts from the area. Every species of fish in the Yukon is displayed in the fry to yearling stages, while an adult collection is being built up. A variety of top quality Indian arts and crafts are

06852

exhibited and sold in the centre, which is open from May to September. A good collection of wildlife specimens from the area are also on display, with more added each year.

THE ST. ELIAS MOUNTAINS

The St. Elias Mountains, the largest group of high peaks in Cordilleran North America, are located in southwestern Yukon Territory, northwestern British Columbia, and southeastern Alaska; the international boundary passes over many of the highest peaks of the mountain The portions of the mountains considered here are (1) the Icefield Ranges, which form the main group of high peaks and include Mt. Logan (19,850), Mt. St. Elias (18,008), and at least 12 other peaks rising above 15,000 feet in altitude and (2) the Kluane Ranges, which form a narrow front range on the northeast flank of the mountains and consis of peaks 6,000 - 10,000 feet in altitude.

Mantling the Icefield Ranges is an extensive intermontane icefield whose average surface altitude decreases from about 8,600 feet on the Hubbard-Kaskawulsh glacier divide to about 6,000 feet on the accumulatio area of the Seward Glacier. This icefield, the most extensive in continental North America, is drained on all sides by long outlet valley glaciers; among the largest are the Lowell, Kaskawulsh, Kluane, Donjek, Walsh, Logan, Seward, and Hubbard. An east-west seismic profile across the Hubbard-Kaskawulsh glacier divide at 8,000 - 8,600 feet, in the heart of the Icefield Ranges, indicates that ice thickness here varies from about 800 to 2,200 feet (Wood, 1963, Pl. II).

In addition to the nearly continuous glacier cover on the Icefield Ranges, valley glaciers and cirque glaciers commonly occur on the flanks of high peaks of the Kluane Ranges.

Climates on the southwest and northeast flanks of the St. Elias Mountains contrast sharply, reflecting the effectiveness of the mountains as a climatic barrier. The climate of the Gulf of Alaska to the southwest is maritime; at Yakutat from 1941 to 1950 the mean annual temperature was 39.5°F and the mean annual precipitation, 134.08 inches (U.S. Weather Bureau, 1959, P. 826). Northeast of the mountains the climate is continental; the three available stations in southwest Yukon, northeast of the mountains, gave the following average values: Whitehorse (1941-1950) 31°F, 10.6 inches; Aishihik (1943-1950) 25°F, 10.1 inches; and Snag (1943-1950) 22°F, 14.1 inches (Kendrew and Kerr, 1955).

Four glaciations have occurred separated by three nonglacial intervals. Ice of the two oldest glaciations (Shakwak and Icefield) flowed through the Slims River valley more than 49,000 years ago. Ice of the subsequent glaciation (Kluane) entered Shakwak Valley through valleys draining the Icefield Ranges, flowed northwest along Shakwak Valley with a thickness locally exceeding 3,500 feet and terminated in the vicinity of Snag.

The last glaciation (Neo Glaciation) was much more restricted, with retreat from maximum occurring before 1870. During the two oldest nonglacial intervals (Silver and Boutellier), Shakwak Valley was ice free. During the third nonglacial interval (Slims) ice receded more than 13 miles up the valley from the present (1970) Kaskawulsh Glacier terminus.

(Reference: George H. Denton, Minze Stuiver; "A Late Pleistocene Glacial Stratigraphy and Chronology, Northeastern St. Elias Mtns., Yukon Terr., Canada".)

Shakwak Glaciation –	more than 49,000 years b.p. (b.p. - before present)

Silver Nonglacial Interim -	more than 49,000 years b.p.
Icefield Glaciation -	Start: more than 49,000 years b.p. End : 37,700 years b.p.
Boutellier Nonglacial Interval -	Start: 37,700 years b.p. End : 30,100 years b.p.
Kluane Glaciation -	Start: 30,100 years b.p. End : 12,500 - 9,780 years b.p.
Slims Nonglacial Interval -	Start: 12,500 - 9,780 years b.p. End : 2,640 years b. p.
Neoglaciation -	Start: 2,640 years b. p. Still current

Youngest major neoglacial advance, the most extensive of the last 9,780 years, occurred through the last few centuries. Glacier retreat from this maximum began before 1879 A. D.

BRIEF RESUME OF ST. ELIAS GEOLOGY

It must be appreciated that only a limited amount of geology is known for the area, as 50% of the total area is overlain by ice.

The area locally referred to as the Front and/or Kluane Ranges has been mapped by the Geological Survey of Canada on a scale of 1 inch to 4 miles.

For those interested in pursuing the geology, further reference may be made to the following published maps:

Map 1177A Kluane Lake Geology Map
Map 1134A Kaskawulsh Geology Map
Map 1019A Dezadeash Geology Map

The Icefield Ranges which are 80 to 90% ice covered have been sporadically and lightly touched by a small number of large mining companies tracing some suspected favourable geological unit either south eastwards from Alaska and/or north westwards from British Columbia. This work was hampered by the high elevations and the few ice-free exposures.

The Icefield Ranges are suspected to be mainly underlain by granite intrusive rocks (Coast Range Intrusions) and Paleozoic sedimentary rocks ranging from 150 million years (Jurassic) to 375 million years (Devonian). The granitic rocks which probably range from 100 to 150 million years in age, invaded or pushed up into the sedimentary rocks.

The Duke Depression, a well marked valley, separates the Icefield Ranges from the Kluane Ranges.

The Kluane Ranges consist of a mixed complex series of sedimentary and volcanic rocks which range from 100 million years (Cretaceous) to 250 million years (Permian) in age. These have been invaded by a large number of granitic plutons of Cretaceous age (70 to 135 million years).

Much of this same area contains younger volcanic rocks which for the most part are flat lying or slightly folded and were poured out over the land surface which has been established and elevated in late Cretaceous to early Tertiary times. These lavas are believed to have poured up through fissures and are distinguished by their reddish to rusty brown color.

The mountain ranges themselves have been formed by a series of low angle thrust faults and most of the rock types have been affected showing signs of intense crumpling and folding. The direction of force was from the southwest and towards the northeast against the older rocks of the Yukon Plateau. This caused a series of blocks to slide up over one another therefore causing older rocks to overlie younger rocks.

The last major structural thrust fault to the northeast is the Shakwak which dips under the Kluane Ranges and forms a well marked valley containing, in part, Kluane Lake.

When driving through the area, a layer of white volcanic ash may be noted in places. It is well preserved in some areas by a thin cover of vegetation. This ash resulted from an explosion crater near Mount Natazhat, Alaska near the Yukon-Alaska border. This ash may be noted in many areas of Alaska and Yukon and the age has been estimated to be as recent as 1500 to 1800 years ago.

Date Due

MAR 4 '74			
MAR 13 '74			
NOV 19 '75			
APR 12 '7			
MAY 25			
NOV 9			
FEB 27			

06852 Pam: (*430) KLA

The Kluane Lake Area and St.

AUTHOR

Elias Mountains

TITLE

DATE LOANED	BORROWER'S NAME	DATE DUE
FEB 25 '74	R Larson	MAR 4 '74
MAR 6 '74	RENEWAL	MAR 13 '74
NOV 12 '75	Tom Hanson.	NOV 19 '75
APR 5 '77	Paul Klassen	
MAY 18 '77	Y	

06852

BOREAL INSTITUTE
LIBRARY

University of Alberta Library
0 1620 0338 8202